

REMARKS

Claim 19 is amended and Claim 20 is added. Claims 1-20, as amended, remain in the application. No new matter is added by the amendments to the claims.

Applicants added Claim 20 to further define the grooves 19 shown in the drawings.

In the Office Action dated February 24, 2005, the Examiner rejected Claims 1, 2, 5-9, 11, 12, and 15-18 under 35 U.S.C. 102(b) as being anticipated by Felber (CH 346442). The Examiner stated that Felber discloses a mounting hub comprising a plastic frustum-shaped body (5) having an upper surface with a first diameter and an opposed lower surface having a second diameter larger than the first diameter (see Fig 2), the upper surface having fastening means (see Fig 2), and a mounting bore (see Fig 2) extending through the body between the upper surface and the lower surface, and the bore having an inner surface (see Fig 2).

The Examiner further stated:

Re Claims 2 and 12, the fastening means is a plurality of apertures formed in the body at the upper surface (see Fig 2).

Re Claim 5, the inner surface has a cylindrical profile with a plurality of radially outwardly extending grooves (see Fig 2).

Re Claim 6, including a recess (6) formed in the upper surface (see Fig 2).

Re Claims 7 and 16, including an annular recess (10) formed in the lower surface between a central boss and an outer wall of the body (see Fig 2).

Re Claims 8 and 17, a plurality of ribs dividing the recess into a plurality of segments (col. 1 lines 20-21).

Re Claims 9 and 18, each segment has an associated slot formed in a bottom wall of the recess (see Fig 2).

Felber shows a two part hub 6 having a lower part 5 and an upper part 7. Applicants note that Felber does not show the following features recited in Claim 1 and dependent Claims 2-10:

- a. A plastic body.
- b. A generally planar upper surface (Felber's upper surface is stepped at 4).
- c. A generally planar lower surface (Felber's lower surface is stepped).
- d. An upper surface having fastening means (Felber's apertures that engage the screws 8 are at the lower surface of the upper part 7).

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The Examiner didn't specifically address independent Claim 11. Applicants note that Felber does not show the following features recited in Claim 11 and dependent Claims 12-18:

- a. A plastic body.
- b. A generally planar upper surface (Felber's upper surface of the frustum-shaped lower part 5 is stepped at 4).
- c. A generally planar lower surface (Felber's lower surface of the frustum-shaped lower part 5 is stepped).
- d. Fastener apertures formed at the upper surface (Felber's apertures are at the lower surface of the upper part 7).
- e. A tapered mounting bore (Felber's bore is straight).

Thus, Felber does not show or suggest the steering wheel mounting hub defined by Applicants' Claims 1-18 and new Claim 20.

The Examiner rejected Claims 3, 4, 13, and 14 under 35 U.S.C. 103(a) as being unpatentable over Felber (CH 346442) in view of Steffens, Jr. (US 6,457,743). The Examiner stated that Felber discloses a hub as described above, but Felber does not disclose the inner surface having a star shaped profile formed by a plurality of V-shaped grooves. According to the Examiner, Steffens, Jr. discloses a hub having an inner surface having a star shaped profile formed by a plurality of V-shaped grooves and it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the hub of Felber in view of the teachings of Steffens, Jr., to include the star shaped profile in order to prevent relative rotation between the hub and the shaft.

Steffens, Jr. states that the hub 130 has a splined first section 142 which appears to be similar to the configuration shown at 11 in Felber. Thus, Steffens, Jr. adds nothing to the hub shown in Felber. In contrast to the splined mounting bore shown in Felber and Steffens, Jr., Applicants' star-shaped profile is shown in Fig. 6 as having six V-shaped grooves 19a spaced apart around the mounting bore 18a.

The Examiner rejected Claim 10 under 35 U.S.C. 103(a) as being unpatentable over Felber (CH 346442) in view of Plamper (US 4,229,994). The Examiner stated that Felber discloses a hub as described above, but Felber does not disclose the hub being made of plastic. According to the Examiner, Plamper discloses a hub made from plastic (col. 1 lines 49-56) and it

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would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the hub of Felber to be made from plastic as taught by Plamper in order to improve the strength of the hub.

Substituting plastic for the metal of the Felber hub would decrease the strength. Plamper recognizes this problem and provides an embedded metal washer 19 to reinforce hub. Furthermore, Plamper teaches that a plastic hub should be integral with the wheel which is contrary to the separate wheel and hub construction of Felber and Applicants' invention.

The Examiner rejected Claim 19 under 35 U.S.C. 103(a) as being unpatentable over Felber (CH 346442) in view of Leston (GB 1236264) and Plamper (US 4,229,994). The Examiner stated that Felber discloses a steering wheel (1) having a center disk, a fastener means, and a mounting hub connected to the center disk (3) by said fastener means (8), a plastic frustum-shaped body (5) having an upper surface with a first diameter and an opposed lower surface having a second diameter larger than the first diameter (see Fig 2), a plurality of apertures formed in the body at the upper surface (see Fig 2), a central recess (6) open to the upper surface, and a mounting bore (see Fig 2) extending through the body between the upper surface and the lower surface, and the bore having an inner surface (see Fig 2), but Felber does not disclose the mounting bore being tapered. According to the Examiner, Leston discloses the mounting bore being tapered (see Fig 2) and it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the hub of Felber to include a taper as taught by Leston in order to prevent the hub moving downward on the shaft.

The Examiner further stated that Felber discloses a hub as described above, but Felber does not disclose the hub being made of plastic. According to the Examiner, Plamper discloses a hub made from plastic (col. 1 lines 49-56) and it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the hub of Felber to be made from plastic as taught by Plamper in order to improve the strength of the hub.

Applicants amended Claim 19 to include the retaining nut 26 and clarify that the center disk 28 covers the retaining nut when: the threaded upper end of the steering shaft 25 is inserted in the mounting bore 18; the retaining nut 26 is received in the central recess 17 and threadably engages the upper end of the steering shaft; and each of the fasteners 29 is extended through one

of the mounting apertures in the steering wheel and engages one of the fastener apertures 15 for retaining the center disk against the upper surface 12 of the mounting hub 10.

In the Felber patent, the fasteners 8 extend upwardly through the lower part 5 of the hub 6 and through the ring 3 of the steering wheel and engage an upper part 7 of the hub. No steering shaft or retaining nut is shown, but clearly the ring does not cover a central portion of the hub 6 or any nut that might be used to secure the lower part 5 of the hub 6 to the steering shaft.

Lesten shows a steering wheel 6 attached to an upper surface of a boss 4 by screw bolts 9. A steering column shaft 1 extends through the boss 4 and a hub 7 of the wheel 6 and is engaged by an exposed nut 11. Clearly the hub 7 does not cover a central portion of the boss 4 or the nut 11 used to secure the boss to the steering shaft 1.

Plamper shows a vehicle steering wheel 11 having integral rim 13, spokes 14 and hub 15 molded from plastic material. This is contrary to both Felber and Applicants' steering wheels wherein the steering wheel and the hub are separate parts. Also the rim 13 does not cover a central portion of the hub 15 or the nut 28 used to secure the wheel to the steering shaft 12.

Thus, no combination of Felber, Lesten and Plamper shows or suggests the steering wheel assembly defined by Applicants' amended Claim 19.

The Examiner stated that the prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The Examiner cited the Japanese Patent Document No. 03284475 of Nagata et al. and the U.S. Patent No. 4,721,008 issued to Stoops et al. Applicants reviewed these references and found them to be no more pertinent than the prior art relied upon by the Examiner in his rejections.

In view of the amendments to the claims and the above arguments, Applicants believe that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.